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Technical publication: Guidelines on the establishment by Governments of networks of human settlements training institutions and on-the-job training

I. INTRODUCTION

1. The question of inadequate skilled manpower in the field of human settlements has often been raised at international meetings. The question was raised at the fifth meeting of the Human Settlements Committee, the first congress of the special General Assembly of the Union of African Architects and the first meeting of the Joint Intergovernmental Regional Committee on Human Settlements and Environment. Recently, the Executive Secretary of ECA and the Director of UNCHS (HABITAT) were requested, in the resolution on human settlements adopted by the fourth meeting of the Joint Committee, to promote human resources development to meet needs in the human settlements sector.

2. The Lagos Plan of Action also underscored the importance of skilled manpower to carry out activities in the various production sectors and logistical servicing. Considering the magnitude of the task that needs to be accomplished in terms of training, the deficiency of training facilities observed in certain areas and inadequate financial resources, the African Heads of State recommended extensive co-operation among their States to promote the establishment and use of special training and research institutions at the regional, subregional and multinational levels. These institutions were to be used to train nationals of the various countries in certain specialized fields, resorting, whenever possible, to existing national institutions.

3. To train skilled human settlements manpower, concerted action should be taken at all levels and in all educational and training systems so as to achieve rational human settlements development. Among the tools vital to this end, mention can be made of the establishment of an institutional mechanism and the reform of educational and training programmes. While it is essential to train specialized manpower in the various human settlements disciplines, it is equally important to sensitize those who, without being specialists, nevertheless have to make decisions which have a major impact on human settlements, in the exercise of their duties. This refers, for example, to local council administrators, decision-makers, economic planners, engineers and socio-professional groups such as technicians, managers and specialized workers. Such a strategy could help bring human settlements issues to bear on the major decisions by which national socio-economic development plans are prepared.

4. Human settlements are a relatively new discipline. Specialists in the developing countries often use techniques and strategies designed for the developed economies, which they are obliged to adapt to the social and economic realities of their countries. African specialists trained in the developed countries of Europe, the United States or elsewhere need to adapt their knowledge and techniques to the specific problems of the African environment, as do experienced experts from the developed countries who come to assist African countries in their development efforts.

5. This technical publication has been prepared to indicate some guidelines for African countries for establishing networks of human settlements training establishments. These networks are based on the development of national, subregional and regional potentialities.

II. MANPOWER NEEDS

6. Socio-economic development plans and human settlements development plans cannot be harmoniously integrated unless special emphasis is placed on the training of the manpower needed to design and implement such plans. Data collected by ECA in 1983 and 1985 revealed that African countries had a serious shortage of human settlements planning specialists. The following table gives an idea of the magnitude of the manpower needs in that respect:

	Planners working in the human settlements sector		Support staff			
			Cartographers/ Draughtsmen/ Tracers		Topographers	
	Number 1983	Need in 20 years	Number 1983	Need in 20 years	Number 1983	Need in 20 years
Algeria	-	3015	-	-	-	-
Ethiopia	61	- 78*	21	-	12	-
Guinea	-	-	15	35	10	21
Kenya	94	450	-	950	23	410
Lesotho	7	80	14	104	16	68
Malawi	21	118	19	56	-	-
Mauritius	11	-	29	-	-	-
Mozambique	5	120*	13	-	5	-
Uganda	17	384	18	212	-	-
United Republic of Tanzania	184	1080	450	19300	390	2660

* Projections in 5 years.

7. Analysis of the above table shows a wide gap between the available manpower and the manpower that would be needed by the year 2003. According to planners working in the human settlements sector, most of countries covered by this survey need 14 times their present manpower strength and 18 times the number of support staff they had in 1983. In a report on housing problems in Kenya published by the Government in 1987, it was emphasized that the shortage of skilled manpower was partly to blame for the difficulties encountered in the implementation of housing programmes. The Government also identified inadequate staff training as the main obstacle to the implementation of provincial rural development programmes.

8. In most African countries, land development, town planning and housing departments are faced with the problem of skilled manpower shortage. Such manpower are often concentrated at the central administrations, leaving the provincial and district directorates in the hands of support staff. The

department of physical planning of Kenya has been concerned about such manpower shortage and how it will affect the attainment of its town planning and rural development projections for the year 2000.

9. For a training programme in the field of human settlements to be adequate, it should reflect the main indicators which influence the life of the society, such as population movement, urbanization and technological advances. This is why in addition to a very good basic professional training, it is also necessary to organize refresher or on-the-job training courses periodically. This would make it possible, on the one hand, to test certain theories in the light of development in the social, economic and technological environment, and on the other hand, enable the participants to exchange experiences.

10. In view of the foregoing, it can be said that there is need for an additional level of training to complement formal education in Africa. Such training would be aimed essentially at reducing the gap that exists between practical experience and conventional education which although absolutely necessary for basic theoretical and technical training could be unsuited to local conditions, as most structures, teaching materials and even case studies are based on the experience of the developed countries.

11. The major problem faced with regard to training is determining the objectives and content of programmes in order to adapt them to the social and economic conditions of the individual countries. In addition, competent teaching staff should be found. Because the specialized manpower capable of dispensing such training are few in Africa, the tendency is to call upon foreign manpower, who in turn have to adapt their teaching methods and manuals to local conditions. Generally, the financing of national training institutions is a major problem for African countries, both at the level of establishment of institutions and their management. To overcome such financial problems and also to make training institutions cost-effective, international organizations often advise African States to pool their resources for joint management of the training institutions. This strategy has the added advantage of bringing about diversity in the training programmes. Training costs are reduced where bilateral agreements are reached with certain developed countries or United Nations specialized centres to provide scholarships and cater for students in their training institutions. However, even where the training becomes less costly and sometimes even free of charge, students often receive training which is unsuited to the socio-economic conditions of the respective African countries.

12. The following table extracted from the ECA survey in 1983 and 1985 shows those countries where some of the African human settlements experts are trained.

Country	Africa	Other regions
Ethiopia	-	Italy, France, Great Britain, Hungary, Bulgaria, Cuba, USSR
Guinea	-	Eastern bloc countries,
Kenya	Kenya	Great Britain, United States of America, Poland,
Lesotho	-	Canada, Great Britain, Australia
Malawi	Kenya	Great Britain, Australia, United States of America, Poland, New Zealand
Mauritius	-	France, Great Britain
Mozambique	-	Cuba, Portugal, Italy, East Germany, Poland, Commonwealth Countries
Uganda	Kenya	Poland, Commonwealth Countries,
United Republic of Tanzania	United Republic of Tanzania	Great Britain, United States of America, India, Canada, Australia, Poland, Netherlands
Senegal	Senegal	France, United States of America
Swaziland	Kenya	United States of America, Australia
Zambia	-	Great Britain, Australia, Canada, United States of America, New Zealand
Zimbabwe	Zimbabwe	Great Britain

III. REVIEW OF AFRICAN HUMAN SETTLEMENTS TRAINING INSTITUTIONS

13. The survey conducted by ECA in 1983 and 1985 revealed the existence of a number of training institutions in the field of human settlements. The survey is not exhaustive, but gives an idea of the effort deployed by some African countries to set up the necessary structures for training skilled manpower in this field. Such institutions often limit admission to nationals because of limited capacity. However, most of them admit students and trainees from other African countries or on the basis of bilateral co-operation. In 1985, 52 per cent of the student strength of the Ecole d'architecture et d'urbanisme of Senegal were foreign nationals from Mauritania, Mali, Guinea, the Central African Republic, the Niger, Burkina Faso, Burundi, Rwanda, Morocco, Tunisia, Lebanon and France. In Morocco, 14 per cent of the students of the Institut national d'aménagement et d'urbanisme in Rabat in 1985 were nationals of Mali, Gabon, Tunisia and Zaire. In 1985, the Institut technologique d'art, d'architecture et d'urbanisme in Tunis, Tunisia had among its students nationals of Morocco, Algeria, Cameroon and Côte d'Ivoire. Because of the multinational status of the Ecole africaine et mauricienne d'architecture et d'urbanisme (EAMAU) in Togo, it admits students from some countries which were formally members of the Organisation commune africaine et malgache (OCAM). In 1986, EAMAU had a total of 92 students from Benin, Burkina Faso, the Central African Republic, Côte d'Ivoire, Gabon, the Niger, Togo, Cameroon, Comoros and Cape Verde.

14. The following table gives an overview of institutions that provide training in human settlements in certain African countries:

Country	Institutions	Duration of training
Algeria[1/]	Université de Constantine	4 years
	Ecole polytechnique d'architecture et d'urbanisme d'Alger	6 years
Botswana[2/]	Institute of Development Management Gaborone (Botswana, Lesotho, Swaziland)	
Cameroon[3/]	Ecole Nationale supérieure des travaux publics, Yaoundé	2 years
	Pan-African Institute for Development - West Africa, Buea	
Ethiopia[2/]	Ecole Technique supérieure des municipalités, Addis Abéba, Techniciens supérieurs Un urbanistes	3 years 5 years
	Addis Ababa University, Faculty of Technology	5 years
Egypt[2/]	Cairo University	4 years

Country	Institutions	Duration of training
Ghana[3]/ et [5]/	University of Ghana, Legon School of Administration, Accra	
	University of Science and Technology Department of Housing and Planning Research, Kumasi	3 years
Kenya[1]/ et [5]/	University of Nairobi, Department of Land Development; and Department of Rural and Urban Planning	3 years
	Kenya Institute of Administration, Nairobi	
Lesotho[2]/	Lesotho Institute of Public Administration Maseru	short course
Mozambique[1]/	Eduardo Mondlane University, Institute of Cultural Studies, Maputo	4 years
Morocco[1]/	Institut national d'aménagement et d'urbanisme, Rabat	2 years
Nigéria[3]/ et [5]/	Administrative Staff College, Lagos	short course
	Ahmadou Bello University, Department of Urban and Regional Planning, Faculty of Environmental Design, Zaria	4 years
	Kaduna Polytechnic, Kaduna	
	Nigerian Institute of Management, Lagos	short course
	University of Ife, Ile-Ife	4 years
	University of Lagos, Faculty of Environmental Design, Lagos	2 years
Sénégal[1]/ et [5]/	Ecole nationale d'économie appliquée, Dakar	3 years
	Ecole d'architecture et d'urbanisme, Dakar	6 years
	Techniciens supérieurs en architecture ou en urbanisme, Dakar	2 years
	International Association for Environment and Development in the Third World (ENDA) Dakar	short course

Country	Institutions	Duration of training
Tanzania1/ et 2/	Ardhi Institute, Department of Urban and Rural Planning, Dar-es-Salaam	3 years
	Center for Housing studies, Dar-es-Salaam	short course
	Eastern and Southern African Management Institute, Arusha	short course
Togo2/	Ecole africaine et mauricienne d'architecture et d'urbanisme, Lomé	5 years
Tunisia1/	Institut technologique d'art, et d'urbanisme, Tunis	7 years
Zambia1/	University of Zambia at Ndola, School of Environmental Studies, Kitwe	5 years
	Zambia Institute of Technology, Department of Technical Education; Kitwe	
Zimbabwe1/	University of Zimbabwe, Faculty of Genie Civil and Department of Rural and Urban Planning	

Source:

1/ Replies to ECA questionnaire on the evaluation of needs in the physical planning sector in Africa.

2/ International Handbook of University - English Edition, 1981.

3/ Commonwealth Universities yearbook, 1975.

4/ Mission au Maroc, en Algérie, en Tunisie et au Sénégal en 1985.

5/ Villes-Horizons 2000, Vol. 10, no5, May 1986.

15. Many African countries still depend on the developed countries for the training of their human settlements specialists. It should however, be emphasized that considerable efforts have been made during the past 20 years to set up training programmes in this field. The training institutions of the developed countries offer a wide range of courses of varying duration relating to the human settlements, as do training and research institutions of the other developing countries outside Africa.

16. Most of the training programmes in Africa have been developed jointly with institutions in the developed countries. All the African institutions collaborate with developed country institutions exchanging teachers and students, and this enables them to strengthen their programmes.

17. Some international development organizations and agencies also organize training programmes for Africans and nationals of other developing countries, in general. Among these, mention can be made of the United Nations Centre for Human Settlements, the Economic Development Institut (EDI) of the World Bank, the United States Agency for International Development (USAID), the African Institute for Economic Planning and Development (IDEP), the Pan-African Institute for Development (PAID), the Environnement Développement Action pour le Tiers Monde (ENDA), etc. Such programmes are of varying duration. What is interesting about them is that they are organized at the international, regional or subregional levels.

18. Most of the programmes are aimed at training professional and para-professional manpower. There are only very few training programmes at the local and community levels. Effort is increasingly being made to promote project-specific programmes of this type. Cases in point are the pilot project for social housing executed jointly by HABITAT and the Government of Zimbabwe, the project relating to the development of secondary towns in Zambia and the cleaning up of insanitary housing conditions implemented by the World Bank and the Zambian Government and the project for the development of local building materials implemented by HABITAT and the Government of Senegal. Added to these, some non-governmental organizations provide on-the-job training as well as advisory services and information. Examples of such organizations are the Institute for Cultural Affairs in Kenya, the International Co-operative Alliance in Tanzania and ENDA-Tiers Monde in Senegal.

IV. GUIDELINES FOR IMPROVING HUMAN SETTLEMENTS TRAINING PROGRAMMES IN AFRICA

19. For a long time, training programmes in the field of human settlements consisted of an amalgamation of various topics related to the physical problems of space and to the disciplines of architecture and rural and civil engineering. This system persisted until the need for expanding the physico-spatial context was felt, which expansion brought in other variables dealing with the socio-economic, as well as the administrative, political and environmental aspects.

20. Although the content of training programmes is basically the same for all programmes, it should include aspects that are specific to the area of origin of the students. As such, account should be taken of a number of vital elements during programme development. The following guidelines will help improve training programmes:

1. Training programmes should take account, on the one hand, of the socio-economic situation of the country and of its peculiar geo-physical features, on the other. Case studies, practicals as well as research topics should be designed in relation to the environment in which the students would work after training;

2. Training programmes should be based on the particular human settlements needs and the complexity and dynamics of their constituent parts. One of the objectives of programmes is to enable students to understand the relationships between the various elements of the development process;

3. Training programmes should comprise a judicious balance of theoretical courses and practical work. Standards should be very high;

4. Training programmes should be designed in a such way as to develop team spirit and a good sense team work in the planners being trained since their work calls for collaboration with several specialists from other disciplines.

21. In general, training programmes should be designed to equip students with the knowledge that would enable them to:

22. Develop a methodology for harmonizing the inter-disciplinary elements that would best meet development needs; formulate means of mobilizing the people and resources for implementing development projects; have a general view of the dynamics of spatial programmes, in accordance with the distribution of activities, human resources and human settlements and evaluate and manage human settlements development programmes and projects.

V. GUIDELINES FOR ESTABLISHING NETWORKS OF HUMAN SETTLEMENTS TRAINING ESTABLISHMENTS

23. Due to the economic situation of African countries and the financial investment required for appropriate management of training institutions, it is impossible to these countries to sustain national institutions. This is particularly true in such specialized areas as human settlements. In general, there are two possibilities for organizing training programmes:

24. Establish national institutions: Here, management difficulties could arise as the existing national institutions already have difficulty in supporting themselves;

25. Establish regional or subregional institutions: In this case, management costs of the institutions are borne jointly by the member States, which should adhere to the commitment made to establish the institution. This is all the more important as some regional or subregional institutions are facing operating difficulties due to some States reneging on their commitments. This approach has many advantages, particularly, from the teaching point of view.

26. The survey conducted by ECA in 1983 and 1985 revealed that almost all the national human settlements institutions were admitting students from other African countries. In some instances, this posed problems in the host country when the facilities which had been designed for national needs had to be expanded.

1. Mode of training

27. The fact that most African countries still depend on training institutions outside the continent for the training of their specialized human settlements staff is a major concern in training policy. A report by the United Nations Centre for Human Settlements (HABITAT), published in 1983[1] indicates that the majority of countries in the Eastern and Southern African subregion do not provide training leading to the award of an official diploma in most fields in the human settlements sector. The dependence on training institutions in the industrialized countries is a major shortcoming in terms of the inadequacy of training programmes and the unsuitability of standards and techniques.

28. Training programmes should be designed in a such way as to produce manpower capable of contributing positively to the integrated development of the human environment. Special emphasis should be placed on human settlements, resources, infrastructure and services planning. Programme contents should be geared towards the needs of countries that send students to the training institutions concerned. A balance should also be maintained between theoretical courses and practical work. Practical work enables students to acquire experience in identifying problems related to physical planning, data analysis and project design.

29. In order for students not to lose touch with the professional environment, practical courses should, if possible, be designed in collaboration with user departments such as municipal technical departments and town planning, land development, housing and building directorates. Practical courses should also be organized for students within such departments, thereby involving them in the training programme.

2. Training strategies

30. Whatever the strategy developed to train the human settlements specialists, the need for close relation between training institutions and the user departments should never be overlooked. Training programmes cannot be improved without joint action by user departments and trainers. The teaching arrangement at the Ecole Nationale d'Economie Appliquée in Senegal and the Institut National d'Aménagement et d'Urbanisme in Morocco exemplify how well liaison between training institutions and user departments can work.

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[1] Survey of Training Needs for the Development and Management of Urban Settlements in the Preparation of a Strategy for Training Supports for Countries in the Eastern and Southern Subregions of Africa, UNCHS, January 1983.

31. Opinions differ on how specialist training in the field of town planning and land development should be organized. Some people maintain that specialists courses should not exceed one year. This means, obviously, that trainees should have basic training in one of the major branches of land development, namely economics or geography. Others, on the other hand, advocate a comprehensive programme of long duration, phased over several years and comprising both theoretical and practical courses. This latter strategy is the most common in specialist training institutions in Africa. It has the advantage of enabling students to study certain elements in the training programme in depth.

32. The strategy adopted should also provide for on-the-job training of the professionals after training. Staff at all levels should receive training in the form of refresher courses, periodically, to enable them to adapt new techniques to their environment. Such programmes should be targeted at needs felt in the exercise of the profession. Africans training institutions hardly organize such programmes. As such, African countries, generally, send their staff for refresher courses in European or American institutions. It would be worthwhile to organize such programmes in Africa at the subregional level to promote exchange of experiences.

33. Several strategies are employed in human settlements training in Africa depending on the needs and concerns of the respective countries or group of countries. In general, the training of senior management staff is provided in national or inter-State schools of higher learning and technicians or middle-level staff are trained in technical schools which are now available in almost all African countries. On-the-job training is often conducted in institutions outside Africa; rarely do African countries provide such training.

34. Overall, training capacities are limited because of the insufficient number of trainers and supervisors, equipment and teaching material. For example, in 1983, 38 per cent of the trainer posts at the Department of Town and Regional Planning at the University of Nairobi, Kenya were vacant, according to a report entitled "Republic of Kenya (1983) Report of the University of Nairobi Visiting and Inspection Committee, Government Printer, Nairobi." It is therefore difficult to train senior-level personnel under such conditions.

3. On-the-job training

35. On-the-job training is always necessary to enable decision-makers and professionals to acquire new techniques. It also allows for the appraisal of the technical difficulties encountered in the profession and an exchange of experiences among participants. Such training should aim at several socio-professional categories, particularly those responsible for the design and implementation of human settlements policies, municipal administrators, local community officials, artisans and skilled workers as well as trainers. For such training to be effective, it should be organized at the subregional and regional levels for certain categories of manpower and at the national level for others.

3.1 Training of decision-makers

36. During a seminar organized jointly in July 1972[2] by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Environment Programme (UNEP), the two organizations considered training needs in the field of human settlements in developing countries and stressed that there was need for on-the-job training of human settlements managers. Manager's training should focus on methodology, management and project development, planning techniques, public relations and the like. Given their responsibilities, managers cannot be away for too long. As such their training should be in the form of seminars of short duration, preferably at the subregional or regional levels. Such programmes organized at the national level would help consolidate the working relationship between participants.

3.2 Training of professionals (planners and technicians)

The objective of on-the-job training is the same for all socio-professional categories. Such courses should make it possible to retrain professionals, in a relatively short time, in new techniques, planning methodologies, project management and evaluation, environmental protection and ecological problems, in general. Such courses also allow for exchange of experiences among participants.

3.3 Training of municipal administrators

38. As municipal administrators are not necessarily professionals or technicians in the field of human settlements, although the major part of their duties relate to human settlements management and development, training courses should be organized to introduce them to the principles of human settlements planning and management. These should be more of induction rather than refresher courses. Seminars for municipal administrators should be geared towards issues relating to spatial organization, town planning documents, operational town planning, project preparation, management and evaluation, to enable them to exchange experiences on local planning, municipal organization, municipal resource mobilization, communal participation in project implementation and municipal administration.

3.4 Training of local community authorities

39. Local community authorities are directly involved in the implementation of town planning and housing projects in their communities. They should, therefore, be familiar with the techniques of human settlements planning and project management. It is necessary for them to have a knowledge of all the areas that contribute to human settlements development.

40. Human settlements include sectors which require the active participation of the people and not only that of professionals or political authorities. It would, therefore, be worthwhile to increase the awareness of local community authorities by integrating the vital aspects of these sectors in training

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[2] UNESCO-UNEP, Human Settlements Managers Training Programme, July 1977.

programmes. This is, obviously, the best way of sensitizing the people to the need for collective effort for improving the human settlements environment. Seminars for local community authorities should be geared towards town planning documents, operational town planning, human settlements planning, project preparation, management and evaluation, popular participation in human settlements development and municipal legislation and administration. Such seminars should be organized at the provincial level.

3.5 Training of skilled manpower and artisans

41. The training of skilled workers and artisans is aimed at upgrading their skills while also ensuring the dissemination and popularization of research findings on the production and use of locally-produced building materials. Such training affords the opportunity, on the one hand, of disseminating housing and improvement techniques and, on the other hand, making skilled manpower available to housing programmes. During training, participants undergo the theoretical courses which are a vital complement to their technical knowledge. The courses could be dispensed using the conventional method but with the support of audio-visual materials. Lastly, practical courses based on the construction of simple structures, could also be given in addition to the theoretical courses. The programme should focus on techniques for the manufacture of local materials, principles of applied technology, interpretation and reading of maps, work site planning and organization, preparation of estimates, enterprise management, etc. The duration of such training should be longer than that for the socio-professional categories mentioned above. The courses should be organized at the departmental and local levels. The programme could be extended to private promoters as well as to building and housing co-operatives.

42. For the training of skilled workers, another type of programme aimed at improving upon the traditional apprenticeship system could be organized. In-plant training could also be organized.

43. It should be mentioned that most of the artisans in African countries have been trained through the traditional apprenticeship system and that it would appear that the system would continue for a while yet. It is, therefore, important that the public authorities support the system by controlling its functioning and improving it.

44. In-plant training entails introducing within enterprises or a group of enterprises courses aimed at training skilled artisans to meet the needs of the enterprises.

3.6 Training of trainers

45. A good university education and practical experience are necessary for trainers in the field of human settlements. In addition to exchange of teachers among training institutions, it would be advisable to organize trainer-practitioner seminars periodically. Such seminars would enable trainers to discuss the applicability of certain theories and the relevance of certain methodologies, on the one hand, and practitioners to obtain information on the researches conducted by the enterprises, on the other. This would enable

trainers to maintain a high academic standard and thus prevent professional in competence and obsolescence.

VI. CONCLUSIONS AND RECOMMENDATIONS

46. The high demand for specialists in the field of human settlements in African countries should prompt these countries to develop training programmes at all levels. This document has been prepared to impress upon decision-makers the need to set up such programmes and to formulate guidelines for establishing them.

47. Some African countries having felt the need for training institutions, have set up their own, often with the assistance and along the lines of those of the developed countries. Such institutions admit students from other African countries and on the basis of bilateral agreements. The economic crisis facing African countries has led to a restructuring of training programmes with a view to rational utilization of available resources. Training in the field of human settlements calls for multinational co-operation. African countries should, therefore, demonstrate the political will to contribute to the establishment and joint use of institutions for training human settlements planners. Without such co-operation, it is unlikely that some African countries will be able to establish and profitably manage their own institutions at the national level.

48. Training programmes should be designed in a such a way as to meet the needs of African countries, increase the output of workers and upgrade their skills. Training should be provided in the environment and socio-cultural and economic context in which the specialized staff would work after training.

49. The following recommendations could help improve human settlements training programmes in Africa.

1. Action at national level

(a) National human settlements development programmes should define manpower needs and training priorities for the various categories of staff;

(b) National liaison offices should be established to co-ordinate activities of the human settlements training and research institutions;

(c) Training programmes should be instituted for municipal administrators local community authorities, workers and artisans. To do this, recourse should be made to the services of the competent international and African regional African organizations;

(d) Regional co-operation should be promoted for rational use of existing human settlements manpower training institutions in African countries;

(e) Measures likely to encourage specialized human settlements manpower to remain in the public sector and to prevent brain drain should be adopted;

(f) Manpower output should be increased through the institution of on-the-job training programmes at all levels, thus, enabling them to participate fully in national development;

(g) Training components should be provided for in all human settlements development projects;

(h) The people should be sensitized to human settlements problems by including in school and university curricula issues relating to this field and by increasing their awareness through information.

2. Action at subregional and regional levels

(a) Regional and international organizations should co-ordinate their activities within the framework of their training programme projects;

(b) Current training programmes should be evaluated with a view to making them more operational to meet the needs of African needs;

(c) African countries should be assisted to establish on-the-job training programmes for their human settlements manpower;

(d) Regional co-operation in human settlements training should be promoted through an exchange of programmes, teachers and students and by the introduction of an inter-training-institution liaison bulletin so as to ensure wider dissemination of the research findings of the various institutions;

(e) African institutions should be assisted to train trainers in the field of human settlements through the organization of courses and the provision of training/retraining scholarships for trainers;

(f) Co-operation in the field of human settlements between African training institutions and those of the developed countries should be increased;

(g) On-the-job training should be promoted through the institution of pilot demonstration projects.

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